

*BRAND PLACEMENT AND CONSUMER CHOICE:  
AN IN-STORE EXPERIMENT*

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An in-store experiment was performed to investigate the effects of shelf placement (high, middle, low) on consumers' purchases of potato chips. Placement of potato chips on the middle shelf was associated with the highest percentage of purchases. The results confirm the importance of item placement as a factor in consumers' buying behavior.

DESCRIPTORS: consumer behavior, experimental marketing, in-store experiments, shelf placement

One of the most influential models in marketing is the marketing mix (product, price, place, and promotion; McCarthy, 1960). The marketing mix is designed to stimulate and influence consumer demand for brands by manipulation of variables associated with the brands (e.g., packaging, placement). The role of the marketer in the marketing mix is to identify variables that increase the saliency or discriminability of the brands and enhance the effectiveness of the brands as reinforcement, thereby increasing the likelihood that consumers will buy the brands (see DiClemente &

Hantula, 2003; Foxall, Oliveira-Castro, James, & Schrezenmaier, 2007, for reviews).

One variable that appears to affect consumer buying behavior is shelf placement (Dreze, Hoch, & Purk, 1994). Even though research usually supports the claim that placing brands on the middle shelf increase sales, this relation has not been demonstrated unequivocally (e.g., Frank & Massy, 1970). The Wal-Mart consumer and market knowledge team used an eye-tracking method to measure consumers' observing behavior in stores (Luigi Ciuti, personal communication, February 21, 2005). The results indicated that most shoppers failed to look at one third to one half of the brands on the shelf; shoppers looked mostly at the products in the center of the shelf. In fact, shoppers looked at the brands positioned in the center of the shelf nine times more than those placed in the corners. However, these findings are based on proprietary research (i.e., studies that were not published in peer-reviewed journals, but were conducted by businesses for their own use); therefore, the reliability and validity of these findings are not known.

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One method of assessing the effects of shelf placement on consumer behavior is to manipulate the placement of items on shelves in stores and measure consumer behavior. Surprisingly, in-store field experiments (e.g., Curhan, 1975) are uncommon in marketing science and consumer behavior research, in which researchers rely largely on interviews and laboratory experiments (Gaur & Fisher, 2005). By contrast, in-store experiments are well known in marketing practice (i.e., proprietary studies), in which simple between-groups and A-B-A research designs are more common (e.g., Doyle & Gidengil, 1977). For example, Gaur and Fisher examined the practices of 32 large U.S. retailers and found that 90% conduct price experiments for proprietary use.

The purpose of the present study was to evaluate the effects of shelf placement on consumer purchases of potato chip brands. In addition, we collected data on purchases of potato chips from an extra line-up, which is a large display of a single brand at the entrance of the store.

## METHOD

### *Participants, Setting, and Product*

Data refer to the sales volume of every brand in the potato chip product category (24 brands, including the target brand) sold in two budget stores in Reykjavik, Iceland. The target brand of potato chips was an international brand with a salty taste, and the other brands were of similar type (salty) or had other flavors (e.g., sour cream). Shelf height (the height of the shelf from the floor) was the same in both stores for the low (24 cm), middle (123 cm), and high (173 cm) shelves. The brand facing was the same for each shelf, in that the target brand always had the same amount of shelf space (eight packages presented at the front of the shelf). The extra line-up was a large display at the entrance of the store with 112 facings, containing the target brand of potato chips. Actual sales data were calculated automatically

by a computer that monitored sales as the individual brands were passed over a laser scanner that read the universal product code for each package.

### *Response Definitions and Measurement*

The dependent variable was percentage of units sold of the target brand, which was calculated by dividing the units sold of the target brand by the units sold of the 24 brands of potato chips in the store. This proportion was grouped into periods that consisted of unit sales from Friday to Sunday or Monday to Thursday to control for fluctuations in sales due to day of the week (e.g., an increase in sales of potato chips on Friday).

### *Experimental Design*

We used an alternating treatments design (Falcomata et al., 2008) in which we measured the percentage of units sold when we placed the target brand of potato chips on the high, middle, or low shelf. This design is considered to be appropriate in research settings in which control of extraneous variables is important (Barlow & Hayes, 1979), as was the case in the current investigation in which we evaluated consumer behavior in a real-life environment that was complex and influenced by multiple variables.

We included data on percentage of units sold of the target brand of potato chips during a baseline phase (prior to the alternating treatments phase) to provide data on units sold of the target brand of potato chips in the absence of controlled experimentation. Finally, we also presented data on units sold when the target brand of potato chips was in an extra line-up following the manipulation of shelf placement.

### *Procedure*

The in-store experiment (baseline, shelf placement, extra line-up) took place from February 1 to May 21, 2006. Researchers checked each store at least once per day to ascertain that the product placement was

implemented and recorded correctly. Photographs were taken to confirm correct placement of the target brand. This was also done to detect if there were any extraneous variables in the store that could have a bearing on the sales of the target brand or the other brands in the potato chips category. Sufficient supply of both the target brand and the other brands was kept in the stores throughout the experiment.

*Baseline.* We calculated relative sales of the target brand against the rest of the potato chip product category before any intervention took place. The target brand was not placed in a specific location by the experimenters during baseline, and other variables (e.g., price and availability) may have changed during this phase.

*Shelf placement.* We placed the target brand on one of three different shelves (low, middle, high) for each period of the in-store experiment (Friday to Sunday or Monday to Thursday). The sequence of shelf placements (low, middle, and high shelves) was semirandom, meaning that the same intervention did not occur more than three times in a row. This was done to minimize threats to internal validity attributable to the order of interventions. The price of the target brand was kept constant throughout all conditions of the in-store experiment, and the cost of most of the other brands remained constant. Other important marketing mix variables (McCarthy, 1960) or analogical concatenated matching factors (Killeen, 1972), such as brand amount, quality, packaging, and promotions in the product category were kept constant or did not change significantly. The only variable that did change was the placement of other brands when we moved the target brand's placement.

*Extra line-up.* We placed the target brand of potato chips in a large extra line-up at the entrance of the stores. Number of packages presented at the front, visible to consumers, consisted of 112 facings, as the width of the line-up comprised of seven packages and the

height was 16 rows. The target brand of potato chips also continued to be placed on the regular shelves.

## RESULTS AND DISCUSSION

Relative sales were variable ( $M = 5.2\%$ , range, 0% to 12.8%) during baseline in Store A (Figure 1, top). The relative sales of the target brand became more stable when the shelf placement manipulation was introduced. The relative sales of the target brand were different, depending on shelf location (middle,  $M = 7.5\%$ , range, 6.6% to 8.6%; low,  $M = 4\%$ , range, 2.9% to 5.8%; high,  $M = 3.3\%$ , range, 2.7% to 3.6%). Relative sales of the target brand were highest when it was on the middle shelf. The target brand received a markedly higher proportion of sales ( $M = 12.6\%$ , range, 8.3% to 15.7%) during the extra line-up.

The results for Store B (Figure 1, bottom) replicate those for Store A, although there were smaller differences in sales relative to shelf placement. Sales of the target brand were variable during baseline ( $M = 6.4\%$ , range, 2.2% to 13.2%) and became more consistent when we manipulated shelf placement. Sales of the target brand were slightly higher when the target brand was on the middle shelf ( $M = 5.7\%$ , range, 5% to 6.2%) relative to the low ( $M = 4.4\%$ , range, 4.1% to 5%) or high ( $M = 4.4\%$ , range, 4.1% to 4.7%) shelf. Overall, however, the variance between the relative sales of the target brand during each of the three shelf placements was small. The mean percentage of units sold of the target brand was 9% (range, 3% to 12.3%) during the extra line-up phase.

Overall, the results show that the target brand's relative sales against its product category were higher when it was placed in the middle shelf compared to the high or low shelf. One explanation for these results is that the response effort associated with looking at middle shelves is lower than that associated with looking at the high or low shelf.

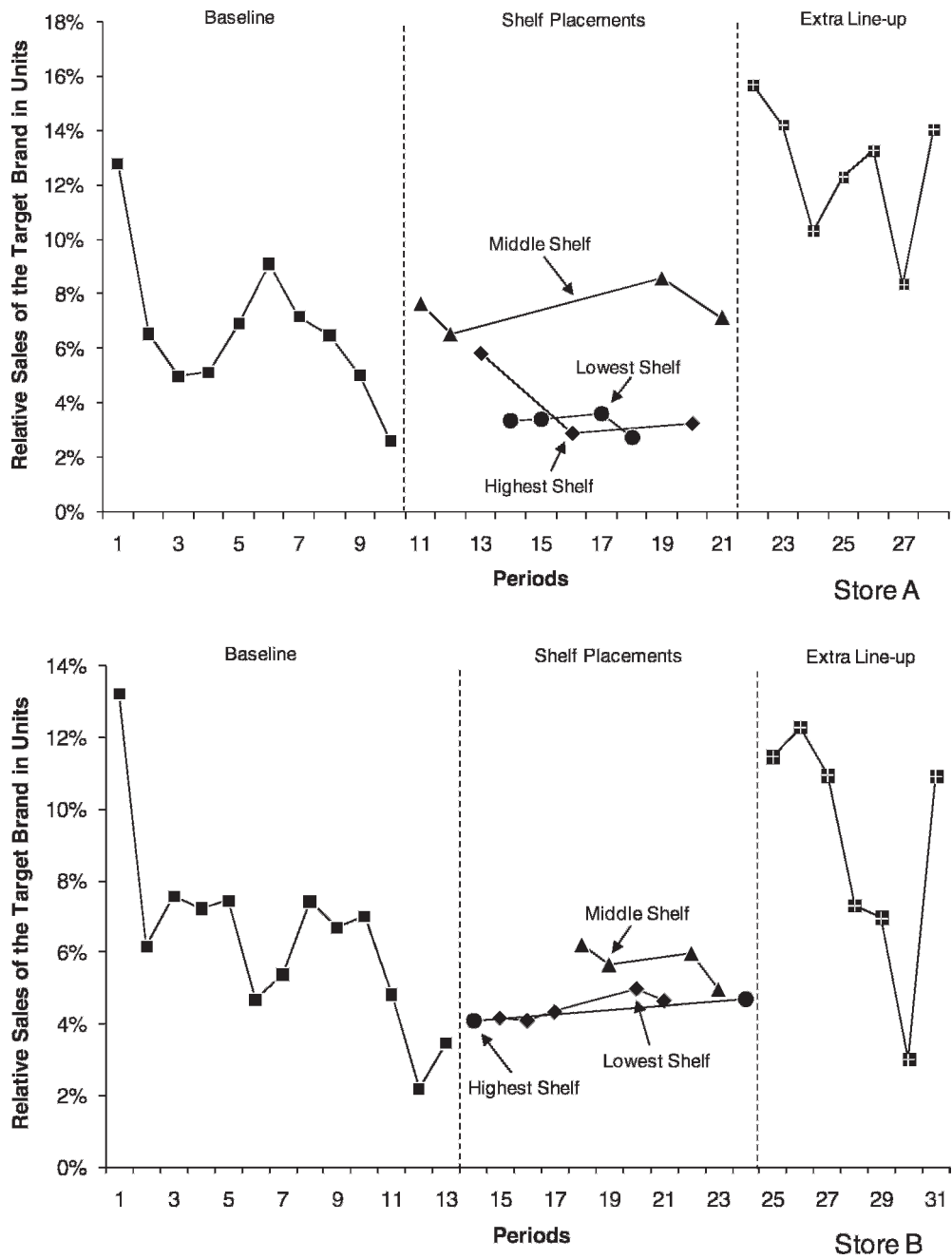


Figure 1. Target brand's proportion of sales at Store A (top) and Store B (bottom).

Placement of the target brand in the extra line-up at the store entrance appeared to increase sales further. Placement of products at the entrance of the store may reduce response effort even further because consumers probably

could not avoid seeing the target brand. In addition, there were no other potato chips brands in the vicinity of the extra line-up of the target brand, which may have increased the saliency of the target brand even further or

reduced motivation to select another brand of potato chips once the consumer selected the target brand. Recall, however, that functional control for the extra line-up was not demonstrated; therefore, the extent to which the extra line-up resulted in increased purchases is speculative. This would be interesting to explore in future research.

The percentage of sales of the target brand of potato chips was consistent across both stores and across the three phases (baseline, shelf placement, extra line-up). However one limitation of the current investigation is that the analysis was restricted to a single type of store (budget) and product. Future research should examine the orderliness of purchases of other product categories or in other types of stores.

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